Beech Hill Primary School Knowledge Organiser

Topic: Science	Year group	Term
Plants	Year 3	Autumn 1 (3 weeks) Summer 1 (6 weeks)

Background knowledge

This will be an outdoor learning opportunity. In Autumn, seeds will be available to observe. Children will visit Scots wood nature gardens in Autumn and summer with activities linking into this topic.
Reach out CPD; Plants will be useful prior to teaching this topic.
Many plants, but not all, have roots, stems/trunks, leaves and flowers/blossom. The roots absorb water and nutrients from the soil and anchor the plants in place. The stem transports water and nutrients around the plants and holds the leaves and flowers up in the air to enhance photosynthesis, pollination and seed dispersal. The leaves use sunlight and water to produce the plant's food. Some plants produce flowers which enable the plant to reproduce. Pollen, which is produced by the male part of the plant, is transferred to the female part of other flowers (pollination). This forms seeds, sometimes contained in berries or fruits which are then dispersed in different ways. Different plants require different conditions for germination and growth.

<u>Common misconception</u>

- Plants eat food.
- Food comes from the soil via the roots.
- Flowers are merely decorative rather than a vital part of the life cycle in reproduction.
- Plants only need sunlight to keep them warm.
- Roots suck in water which is sucked up the stem.

What should I already know?

Year 2
I can describe how seeds and bulbs grow into plants.
I can describe what plants need in order to grow and stay healthy (light, water and suitable temperature.)
I can carry out simple tests independently.

National Curriculum Objectives / Key Skills	The Journey

identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant investigate the way in which water is transported within plants explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal I can describe the function of different parts of flowering plants and trees. I can explore and describe the different needs of plants for survival. I can explore and describe how water is transported within plants. I can describe the plant life cycle, especially in the importance to flowers. Science Enquiry making systematic and careful observations and, where appropriate, taking accurate measurements using standard units setting up simple comparative tests I can set up a simple scientific enquiry to answer a question. I can set up a test to compare. I can make a prediction with a reason. I can make accurate observations. I can measure accurately using standard units. I can draw a bar chart.	Autumn 1. To recap the parts of the plant and identify the functions. 2. To investigate different types of seed dispersal and look how seeds are in relation to how they are dispersed. 3. To design our own wind transported seed and investigate how far they travel. Summer 1. To know what a plant needs to grow, make predictions and decide ways to investigate. 2. To set up practical investigations. 3. To investigate the function of the stem (celery experiment). 4. To observe and measure the rate of growth of the seeds. 5. To observe the different parts of the flowers and the stages of pollination. 6. To draw conclusions and make a bar chart from seed growth. 7. To know the life cycle of the plant.

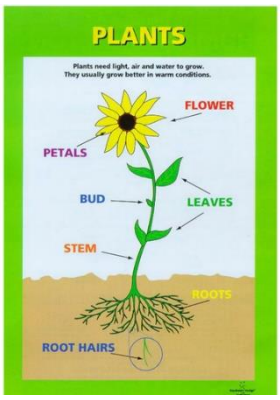
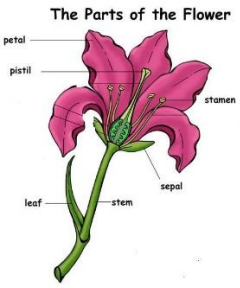
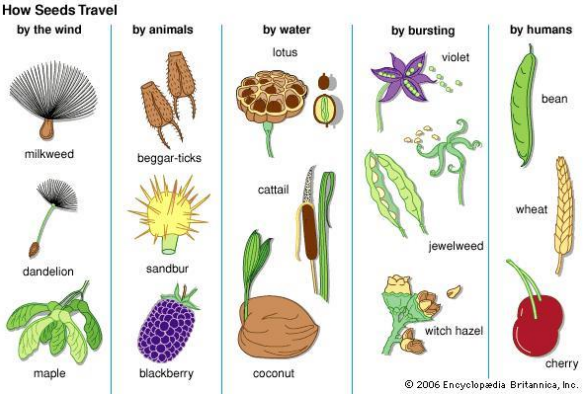
Outcomes

An overview of what children will know / can do

Working towards: I can name the parts of a plant and with support, describe their functions. I can work with a group to investigate what a plant needs to grow. I am beginning to present my results. I can name some of the stages of the plant life cycle. I know some conditions a plant needs to grow.

Expected: I can describe the functions of the parts of a flowering plant. I can predict and investigate what a plant needs to grow and can take simple measurements. I can present this information in a bar chart and say what it shows. I know the conditions a plant needs to grow. I can describe the life cycle of a plant.

Exceeding: I can confidently describe the functions of the parts of a flowering plant. I can predict and confidently investigate what a plant needs to grow and can take accurate measurements. I can present this information in a bar chart and draw simple conclusions. I know the conditions needed for a plant to grow. I can describe the different stages of the life cycle of a plant in detail.

Key Vocabulary	Timeline / Diagrams
Plant – a living thing that grows. Root – grows underground. It keeps the plant anchored in the soil and takes up water and nutrients. Stem – keeps the plant upright and transports water and nutrients to the leaves and flowers. Leaf – part of the plant that makes the plants food. Flower; the usually colourful part of the plant where the seeds are made. Pollen; a yellow powder which is carried from one part of a plant to another so seeds can be made. Petal; the colourful part of the flower which attracts insects. Pollination : the pollen is moved from one plant to another so seeds can be made. Seed – the part of a plant which moves away from the parent plant and can grow into a new plant Seed dispersal- the way in which a seed moves away from a parent plant. Function- the job something does. Observe – to look at something closely Predict – to say what you think might happen Measure – to see how tall something is. Bar chart – a way of displaying information Investigation – to find something out Result – to record what we have found out Comparative test; an investigation where you compare one factor with another. Conclusion; To look at our results and explain what we have found out.	  

Key people / places

Visit to Scots wood garden in autumn (seed dispersal) and Summer (pollination).
STEM career; botanist.

Assessment questions / outcomes

Autumn
Can you name the parts of the plant and state their function?
Can you name different ways seeds are dispersed and sort seeds into the correct method?
Can you give reasons as to why you think the seed travelled the furthest?

Summer

What does a healthy plant need to grow?
Why is a stem important to the plant?
Which of your plants grew the healthier and why?
Can you describe the life cycle of a flowering plant?